TOWN OF ZIONSVILLE
NORTH-SOUTH CONNECTOR STUDY

From Oak Street to CR 575 S

DRAFT REPORT

September 2015

PREPARED BY:

BLN
Beam, Longest and Neff, L.L.C.
Consulting Engineers & Land Surveyors
8126 Castleton Road ■ Indianapolis, Indiana 46250 ■ Phone: 317.849.5832 ■ Fax: 317.841.4280 ■ Web: www.B-L-N.com

PREPARED FOR:
Town of Zionsville

ZIONSVILLE

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TOWN OF ZIONSVILLE NORTH – SOUTH CONNECTOR STUDY

From Oak Street to CR 575 S

Prepared By: Nicole C. Kalck, PE
Beam, Longest and Neff, LLC

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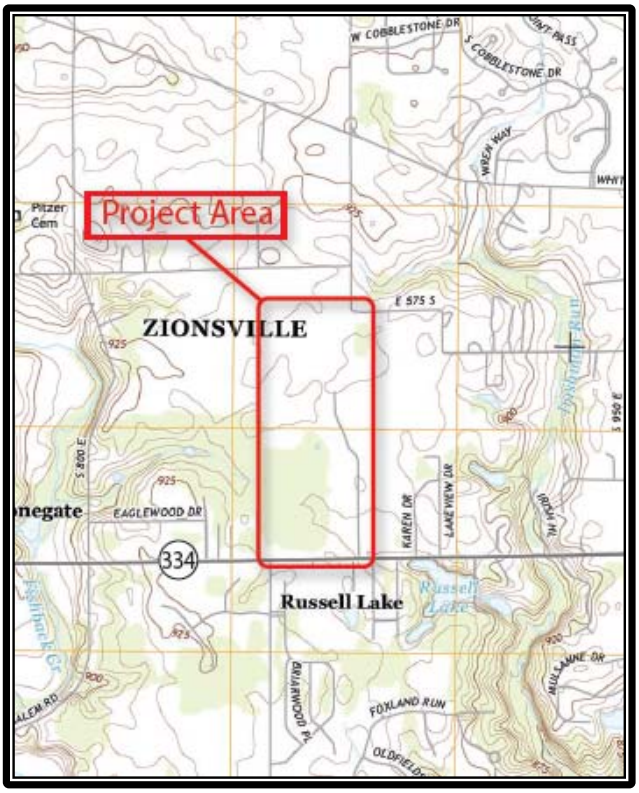
PURPOSE OF STUDY

The purpose of this Connector Study is to evaluate alternates for improved North-South connectivity in western Zionsville. The specific area of study lies between Oak Street and CR 575 S.

This study includes all relevant background data and provides conclusions and recommendations that will guide the ongoing project development.



STUDY LOCATION

The study location is located between Oak Street and CR 575 S, in the Town of Zionsville, Boone County.

The adjacent figure as well as sheets A1 and A2 of the Appendix depicts the study location.

PURPOSE AND NEED

The purpose of this project is to improve mobility in western Zionsville. Increasing traffic demands are placing burden on the existing street network. Residential and school developments are increasing the need for improved mobility on this side of town. In order to accommodate the continued growth in western Zionsville, alternate solutions need to be investigated to meet the mobility needs and alleviate the growing congestion problems.

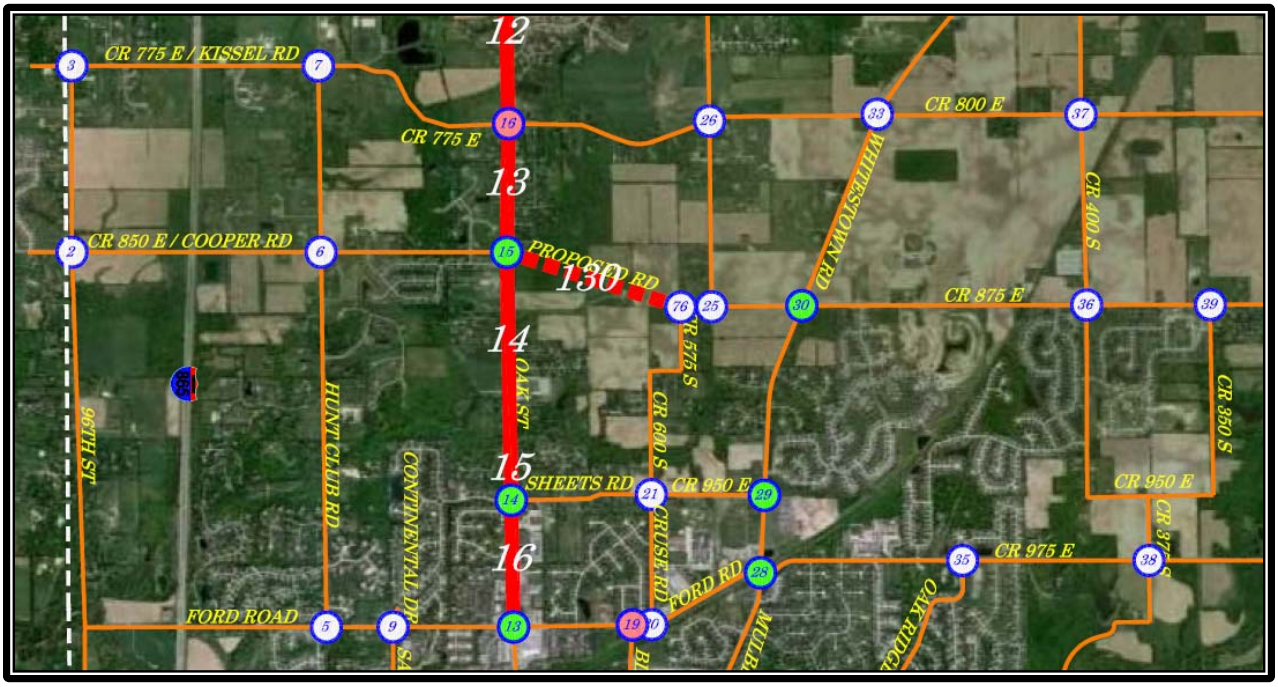
PROJECT HISTORY / PRIOR STUDIES

The 2010 Zionsville Transportation Plan indicated the need for a detailed study to evaluate alternates for improved North-south connectivity in western Zionsville. (see below)

> 5.1.2 *Proposed Road Projects*
>
> 5.1.2.1 North-South Connector Study
>
> A detailed study is recommended to verify the needs and evaluate the alternatives for improved North-South connectivity in western Zionsville. Previous Zionsville Transportation Plans have recommended the upgrade and extension of CR 875 E, coupled with a new interchange at I-865 and Cooper Road in order to accommodate continued growth in western Zionsville. However, these projects have been removed from the Transportation Plan due to concerns about their potential adverse impacts. Other considerations cited by the Town Council include the significant land use pattern changes that have occurred over the past 10 years and the anticipation that SR 334 will be relinquished to local jurisdiction. In light of these plan changes, Zionsville will need to investigate alternative solutions to meet future mobility needs and alleviate growing congestion problems on other major routes (e.g., SR 334, Ford Road and Zionsville Road).

From "*Zionsville 2010 Transportation Plan*"

A Traffic Impact Fee Analysis report (dated 2013, prepared by A&F Engineering) reviewed the major street networks in Zionsville as they presently exist and recommended intersection and roadway improvements based on existing as well as forecasted traffic volumes. Proposed recommendations for improvements include a connector extending existing CR 850 E / Cooper Road to CR 875 E between Oak Street and CR 575 S (see below).



(From "*Town of Zionsville Traffic Impact Fee Analysis*", A&F Engineering)

This Study will examine alternate layouts within the previously defined area, and evaluate their associated impacts.

EXISTING CONDITIONS

ROADWAY NETWORKS

Per the 2010 Zionsville Transportation Plan (Figure 5-1 Thoroughfare Plan), Oak Street is functionally classified as Primary Arterial. The posted speed limit is 45 mph. CR 850 E / Cooper Road and CR 875 E are functionally classified as Collectors. The posted speed limit is 40 mph.

The existing intersection control at CR 850 E / Cooper Road and Oak Street is stop control for CR 850 E / Cooper Road. Oak Street has the through movement. The Traffic Impact Fee Analysis report recommended that Oak Street be widened to a 4 lane facility with a roundabout at this intersection. For purposes of this study, it is assumed that these improvements will occur and that the roundabout would likely be in place (along with the upgrade of Oak Street to a 4 lane facility) when the future N-S connector road is installed.

The Traffic Impact Fee Analysis indicated no improvements were necessary at the northern terminus of the study area (the intersection of CR 875 E and CR 575 S). For purposes of this study a 3 way intersection is assumed with the connector road having the through movement and CR 575 S having the stop condition.

LAND USE

Land use is primarily agricultural and residential. There are no historic features within the study area. One school is located to the west of the study area; however no schools are located within the study area. No major recreation areas are located within the study area.

No cemeteries are located within the study area. There are no known neighborhoods that are located within the study area, although there are residential homes within and adjacent to the study area who would be directly impacted by the project.

See sheet A2 of the Appendix showing the existing land use.

DRAINAGE / WETLANDS / STREAMS

The study area generally lies in a high break point where water then sheds east to Irishman Run or west to Fishback Creek. One jurisdictional wetland has been identified within the study area. (See Appendix A2). One jurisdictional stream exists within the study area as well.

EXISTING UTILITIES

The utilities of AT&T, Bright House Networks, Citizens Energy Group, Boone County REMC, Vectren and Zionsville Sewer are all located in the vicinity of the study area. Gas pipelines are also within the vicinity of the study area. Marathon Crude Oil has a 12" line and 10" line in the vicinity of the project area.

Facing East on Oak (West of CR 850 E / Cooper Rd)

Overhead power poles (Boone County REMC) are located along the north side of Oak Street (see adjacent photo). If the improvements along West Oak are installed (including the roundabout at this intersection) utility relocation may not be necessary in this area.

At the north tie in point there are power poles along the south side of CR 575 S. These would likely require relocation to properly tie in and provide a proper 3 way intersection.

PROPOSED ROADWAY

DESIGN GUIDELINES

The following outlines the proposed design guidelines for this project:

Functional Classification	Urban Collector
Design Speed	40 mph
Terrain	Level

The current posted speed limit along CR 850 E / Cooper Road and CR 875 E is 40 mph. Both roadways consist of 1 travel lane in each direction, with paved shoulders and roadside ditches. There are no known plans at this time to upgrade either of these segments of roadway. For this reason it is proposed to construct a similar cross section, as discussed in the next section.

TYPICAL SECTION

The proposed typical section should consist of 12' lanes with 4' paved shoulders (6' total). This typical section was chosen to best match the current roadway conditions (north and south of the proposed connector) and in line with the recommendations of the Transportation Impact Fee Analysis report and Zionsville Transportation Plan.

DISCUSSION OF ALTERNATES

Three (3) alternates were developed utilizing current design criteria for the anticipated design speed. These alternates can be seen in Appendix A2.

A large residential property lies in the middle of the study area. All alternates were developed in effort to minimize impacts to this property as much as possible, while still meeting the need and purpose of the project.

Alternate 1:

This alternate begins at the intersection of Oak Street and CR 850 E / Cooper Road. It is anticipated a roundabout will be constructed at this intersection and that the proposed alignment will begin and the north terminus of the roundabout. The alignment runs north, and adjacent (to the east) to 5 residential parcels. It then shifts to the east to tie into CR 875 E at CR 575 S. It will require a total take of one residential parcel; however, field investigation suggests that this parcel is currently vacant. (See adjacent photo).

Facing North on CR 850 E (South of Oak)

This alternate would have 1 jurisdictional stream crossing. There are also significant woodland impacts.

Alternate 2:

Alternate 2 also begins at the intersection of Oak Street and CR 850 E / Cooper Road. This alignment immediately shifts to the east, and then turns north adjacent to the residential property in the middle of the study area. The property currently has a long, wooded entrance drive with access to Oak Street. This alternate would modify that entrance, and ultimately create access to the property from the new connector road. This might be undesirable to the property owner.

Facing North along drive

Alternate3:

Alternate 3 begins east of the CR 850 E / Cooper Road intersection. This would add an additional intersection along Oak Street. While it is the shortest and least costly of the alternates, it also directly eliminates the property's scenic private drive (see adjacent photo).

Alternate Summary Matrix

	Alternate 1	Alternate 2	Alternate 3
Length of Roadway	4,075'	4,225'	3,595'
Total Right of Way Required	7.48 acres	7.76 acres	6.60 acres
(forested impacts)	2.29 acres	2.39 acres	2.75 acres *
(stream crossings)	1	none	none
(wetland impacts)	none+	none+	none+
(# of Parcels)	2	2	1
(property impacts)	1 total take	1 total take and 1 building take	1 building take
Anticipated Construction Cost	$1,300,000	$1,300,000	$1,100,000
Anticipated R/W Cost	$150,000	$170,000	$42,000
Construction & RW Cost	$1,450,000	$1,470,000	$1,142,000

**Forested along both sides of driveway.*

+Existing wetlands are identified via the national wetland inventory. Additional wetlands may be in the project area. A Wetland Delineation should be conducted to determine if additional wetlands are located in the area.

Right of way assumed as an 80' corridor width per the Zionsville Transportation Plan, Table 5-5 "right of Way Requirements by Functional Class".

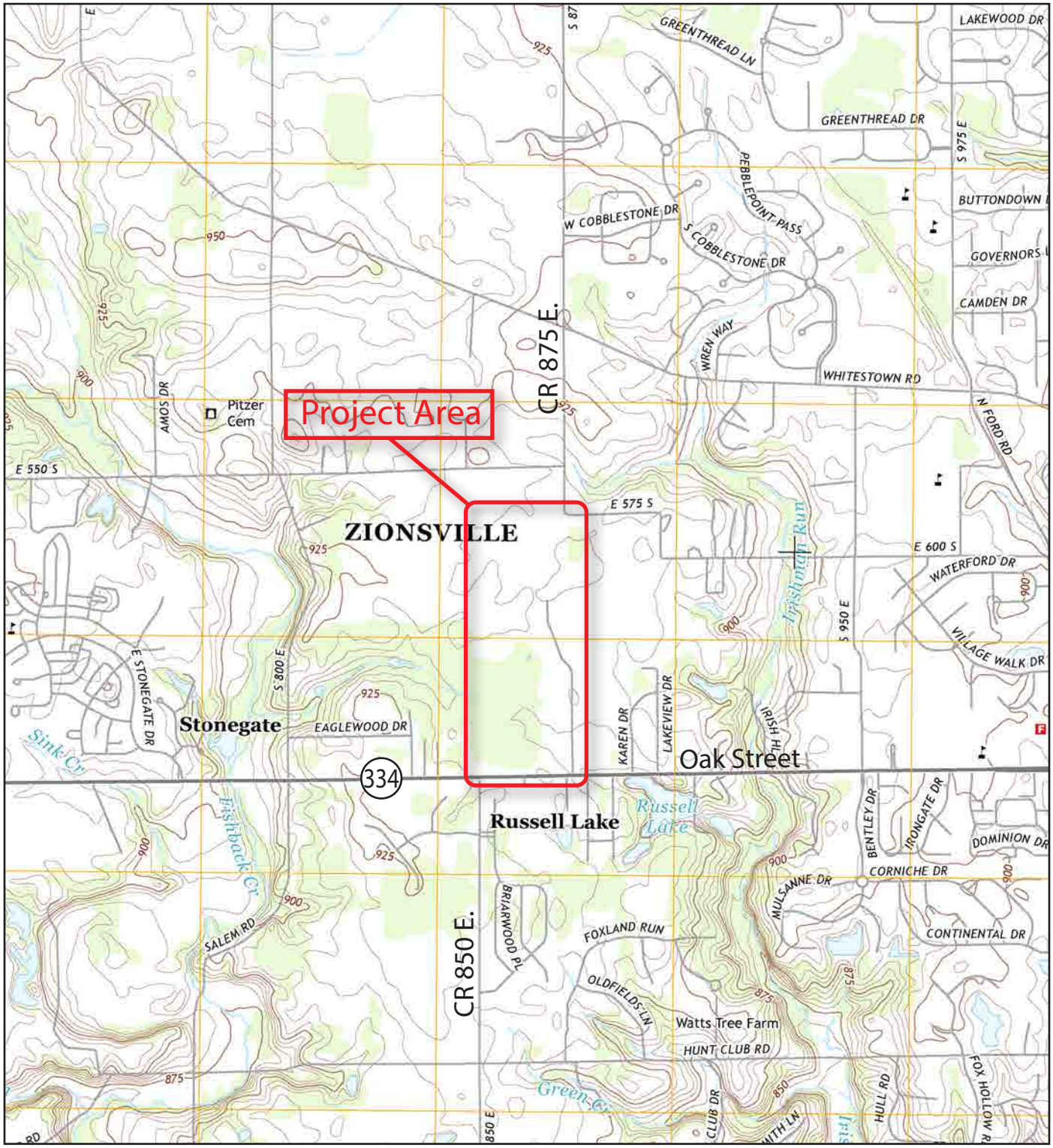
RECOMMENDATION

The evaluation criteria used to determine the recommend alternate include the following:

- Alternate's ability to meet the desired need and purpose
- Environmental impacts (including streams, wetlands, woodlands,
- Residential impacts
- Cost

APPENDIX A

Graphics



Zionsville, IN Quadrangle

Scale = 1" = 2000'

Zionsville N-S Connector

Boone County, Indiana

CR 550 S

CR 875 E

CR 575 S

Salem Rd.

Alternate 1

Not to Scale

Jurisdictional Stream Crossing

Wetland

Wetland

Wetland

Wetland

Existing Culvert

Alternate 3

Alternate 2

Oak St.

CR 850 E

Future Roundabout

BLN Beam, Longest and Neff, L.L.C.
Consulting Engineers & Land Surveyors

Zionsville N-S Connector Alternates